

## *Isotopes Project Overview*

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The principal activity of the Isotopes Project is the evaluation and dissemination of nuclear structure and radioactive decay data. The group coordinates its activities with both the national and international data networks and plays a major role in the U.S. Nuclear Data Program (USNDP). The traditional strong A-chain and nuclide data evaluation effort of the group continues and has been expanded to include evaluations of decay data useful for astrophysics. All evaluated data are entered into the Evaluated Nuclear Structure Data File (ENSDF) that is maintained in the National Nuclear Data Center at Brookhaven National Laboratory. The Isotopes Project is also playing a seminal role in modernizing the current nuclear data information system and in developing effective data dissemination techniques. During the past year, members of the isotopes project staff have also participated in a variety of experiments in the area of low-energy nuclear science. The following projects have been completed within this annual report period:

- Evaluations for:  $A = 83, 92, 169, 215, 219, 223, 227$ , and  $231$  mass chains;  $^{81}\text{Zr}$ ,  $^{166}\text{W}$ ,  $^{179}\text{Ta}$ ,  $^{183}\text{Hg}$ ,  $^{187}\text{Pb}$ ,  $^{191}\text{Bi}$ , and  $^{191}\text{Po}$  nuclides;  $A = 265 - 293$  alpha decay chains added to or submitted for inclusion in ENSDF.
- Adopted and decay data sets for  $^{68}\text{Ga}$ ,  $^{68}\text{Ge}$ ,  $^{125}\text{I}$ , and  $^{141}\text{Ce}$  coded into ENSDF format.
- Training session for new decay data evaluators successfully completed.
- IAEA CRP on Prompt Gamma Activation Analysis evaluations are in progress
- 10,000 users per month using IP web sites; over 2.5 million data requests submitted in FY2000
- Hosted USNDP meeting, April, 2000
- Delivered three contributed talks on USNDP activities at APS meetings
- Conducted a radiochemical chemical experiment and determined that the half-life of the 3.5 eV isomer in  $^{229}\text{Th}$  must be either less than 6 hours or greater than 22 days
- Remeasured intensities of  $^{66}\text{Ga}$  g-rays as a standard for germanium detector efficiency calibrations

Members of the Isotopes Project have always been encouraged to spend a portion of their time working on experiments in the area of low energy nuclear physics. In the coming year, we plan to increase our activities in the area of experiments related to needs of nuclear data, particularly in the area of nuclear astrophysics. We intend to hire a

post doc who will spend 50% of his or her time working on experiments.